As manufacturer of safety equipment, the Cobianchi Liftteile AG company is responsible for the design and manufacture of the Cobianchi progressive safety gears PC1610/PC1620 and the progressive safety gears PC2010/PC2020.
In order to make the production, the distribution, and the maintenance of our progressive safety gears easier for the manufacturers of the framework and for the installation companies, these operating instructions have been established.

These operating instructions document the standard versions PC1610/PC1620 for installation width 180-240mm und and the standard versions PC2010/PC2020 for installation width 240mm. If your installation type differs from the versions described in these instructions, please contact your technical office or the responsible construction department.

In the following you will find important notes, which if properly observed will contribute to an impeccable installation and operation.

The following two drawings have to be enclosed with these instructions:

Drawing no.	Brake type	Front view, top view, side view
1610-BA01-1	PC1610/PC1620	Assembly drawing FV with Pos. no.
2010-BA01-1	PC2010/PC2020	Assembly drawing FV with Pos. no.

These operating instructions consist of some pages of text (number depending on the language) and two drawings. Customer-specific solutions may require deviating installation sequences. The progressive safety gears can be installed on top of or underneath the cabin. For detailed information, please refer to our technical documentation.

Subject to deviations from the standard versions described here.

To be observed prior to the installation:
The progressive safety gear types described above have downward braking power. One pair (basic unit) consists of two adjusted and sealed green safety gear heads (item 1). The designs PC1610 and PC2010 are equipped with a fixed brake shoe (Pos. 12a); the designs PC1620 und PC2020 are equipped with a double brake shoe as release tool (Pos. 12b).

All four safety gear types are extremely compact and can be supplied with left or right hand safety gear rope anchor (Pos. 9) design. The connection shaft is fixed directly to the safety gear heads and runs along the crossbeam between safety gear head (Pos. 1) and safety gear head (Pos. 1). The PC1610/PC1620 types have simple safety gear rope anchors (Pos. 2). When the safety gear is released the brake wedges (Pos. 11) are pushed upwards. The PC2010/PC2020 types have a transmitted safety gear rope anchor (Pos. 9). When the safety gear is released the brake wedges (Pos. 11) are pulled upwards.

The performance specifications on the type plate refer to the use in pairs. The serial numbers are embossed on the safety gear heads (Pos. 1). These numbers must correspond to the serial number on the type plates attached and enclosed and must be able to be allocated to the serial number of the installation. If this is not the case, there must have been a confusion and you should consult the purchase department, your warehouse or the manufacturer directly.

1. Assembly

1.1. Assembly and alignment of safety gear heads

As a standard, the progressive safety gears are supplied as fully assembled basic unit (Pos. 1). The following accessories are available on request: four gusset plates (Pos. 2), guide shoe plates (Pos. 4), end stop (Pos. 17) for safety gear rope anchor (Pos. 9). In the case of the PC20XX the end stop is integrated in the transmitted safety gear rope anchor. Further accessories are mounting for safety-limit switch (Pos. 3), limit switch (Pos. 5), and safety rope connector (Pos. 8). The installation of the safety gear heads (Pos. 1) in the safety gear frame in any case has to be made using four bearing shafts (Pos. 13). The bearing shafts (Pos. 13) and the mounting holes in the housings should be greased slightly for assembly. During assembly, smooth insertion of the bearing shafts (Pos. 13) must be possible without using force.
If gusset plates (Pos. 2) are provided, they must be screwed to the frame using an adequate number of screws M12. Secure absorption of the torque acting on the frame structure via the gusset plates (Pos. 2) during the brake process must be ensured.

The green safety gear heads (Pos. 1) are secured in a neutral position by means of the pressure springs (Pos. 15) on the side. For each safety gear head (Pos. 1) one pressure spring (Pos. 15) is mounted to one bearing shaft (Pos. 13), on the **brake wedge side** (Pos. 11). The M6 set screw on the opposite side (Pos. 14) is used toadjust the position of the safety gear heads (Pos. 1) in respect to the rail. Recommendation: Distance brake shoe (Pos. 12) to guide rail running surface 2.0mm. The running surface width of the brake shoes (Pos. 12) must not be below the minimum value. For correct installation, the distance from the safety gear housing bottom to the rail head front side is normally 3-4mm. This distance should be centred with respect to the two safety gear housings according to the centre distance. If necessary, re-adjust cabin guide shoes.

1.2. Mounting of connection shaft between safety gear heads

The wedge safety gears described here are designed for an internally positioned connection shaft. The shaft itself is not within our scope of supply. Please use a structural steel tube 16x16x2mm according to DIN2395-3. For the respective length of the connection shaft refer to drawings enclosed. The connection shaft is mounted to the release shaft (Pos. 10) by means of four square section release shaft couplers (Pos. 6). The connection shaft is mounted to the release shaft (Pos. 10) by means of four square section release shaft couplers (Pos. 6).

1.3. Assembly of release mechanism tension spring

The brake wedges (Pos. 11) of the progressive safety gears described herein are secured in their open position by means of a release mechanism tension spring (Pos. 7). Secure the release mechanism tension spring (Pos. 7) in a suitable position at the safety gear frame and tension by 5-10mm with safety gear in open position. The release mechanism tension spring (Pos. 7) **must** be mounted on the **safety gear rope side** in order to prevent excessive torsion of the connection shaft. Depending on the application, particularly for greater lifting heights and stronger safety gear ropes, increased tensioning of the release mechanism tension spring (Pos. 7) may be required. In the case of increased tensioning of the spring, it must be checked if the slip through force of the safety rope generated by the take-up weight of the tensioning pulley with activated speed limiter is still enough to ensure secure engagement of the progressive safety gear.

1.4. Safety rope anchor

As a standard, the safety rope anchors (Pos. 9) are mounted directly to one of the safety gear heads (Pos. 1). They can be ordered for left- or right-hand design. If left- or right-hand design is required, can be determined as follows: If, standing on the cabin facing the rail, the safety rope is on the left-hand side of the rail = left-hand design, right-hand side of the rail = right-hand design.

1.5. Mounting for safety-limit switch

The limit switch (Pos. 5) is screwed to the gusset plates (Pos. 2) using the mounting for safety-limit switch or directly to the safety gear frame. After assembly, check if the limit switch (Pos. 5) operates securely and is not damaged when the progressive safety gear is engaged.

1.6. Type plate

Before attaching the enclosed type plate in a clearly visible position of the frame, the intended surface must be cleaned and be completely dry. The adhesive surface of the type plate must not be touched over a large surface. After adhering press firmly.

1.7. Indicating label for oiled rails

Every progressive safety gear for use with oiled rails is supplied with a yellow indicating label. This should be attached in a clearly visible position (e.g. on rail oiler). Only an ordinary machine oil of the viscosity class ISO VG 68-150 must be used without any extreme-pressure additives (lubrication oil C according to DIN 51517, part 1). Because lubricating oils for gearboxes, engines or hydraulic units frequently contain additives, they are not suitable for this application.

2. Connection

Wire limit switch (230V, 4A) (Pos. 5) and check function.
Connect safety gear rope with rope end connections of safety rope connector (Pos. 8) at safety rope anchor (Pos. 9). The release force at the safety rope anchor (Pos. 9) required for the safety gear to engage is approximately 150-250N, depending on the tensioning of the release mechanism tension spring. It must be ensured that the tensile force in the limiter rope generated by the released speed limiter is at least 2 times the force required for the safety gear to engage (however, at least 300N).

3. Commissioning

Note: To be observed prior to the first safety gear test:
In all cases, dirt, rust-protection, and eventual paint coats have to be removed from the guide rail running surfaces. This is made best using cold cleaning agents or brake disk cleaning agents.
For oiled rails, lubrication oil C according to DIN 51517, part 1 recommended according to yellow label or equal should be used.

4. Maintenance

If the progressive safety gears have been correctly installed, then the maintenance is limited to the following checks:

4.1. Condition of rails:
according to above commissioning instruction

4.2. Triggering linkage:
Synchronous response of both brake wedges (Pos. 11), connection without any play through the connection shaft, and free and smooth movement of triggering linkage and safety gear rope anchor (Pos. 9)

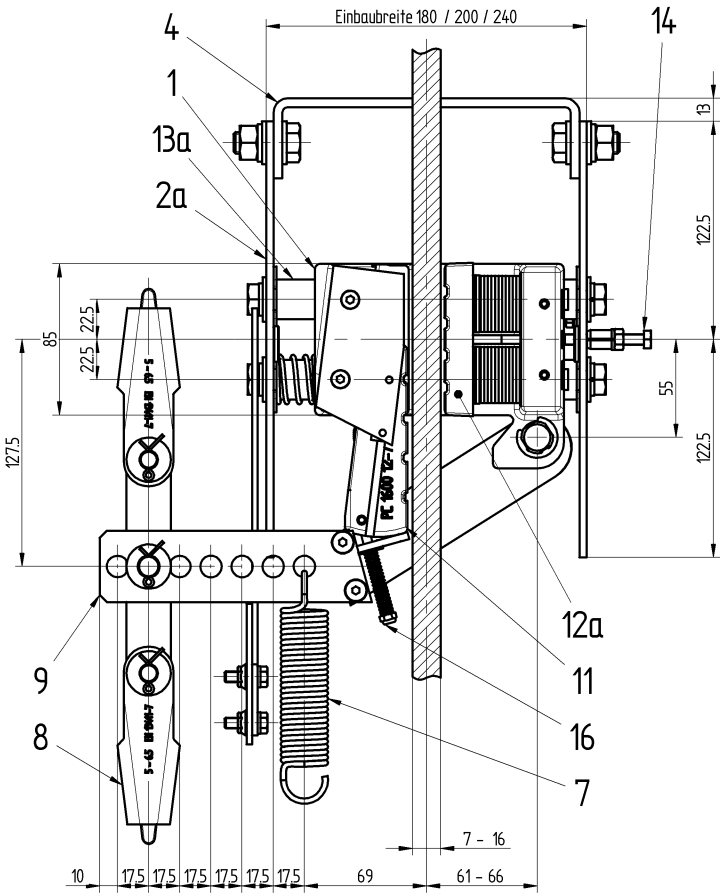
4.3. Limit switch:
Correct electrical/mechanical functioning, actuation ensured

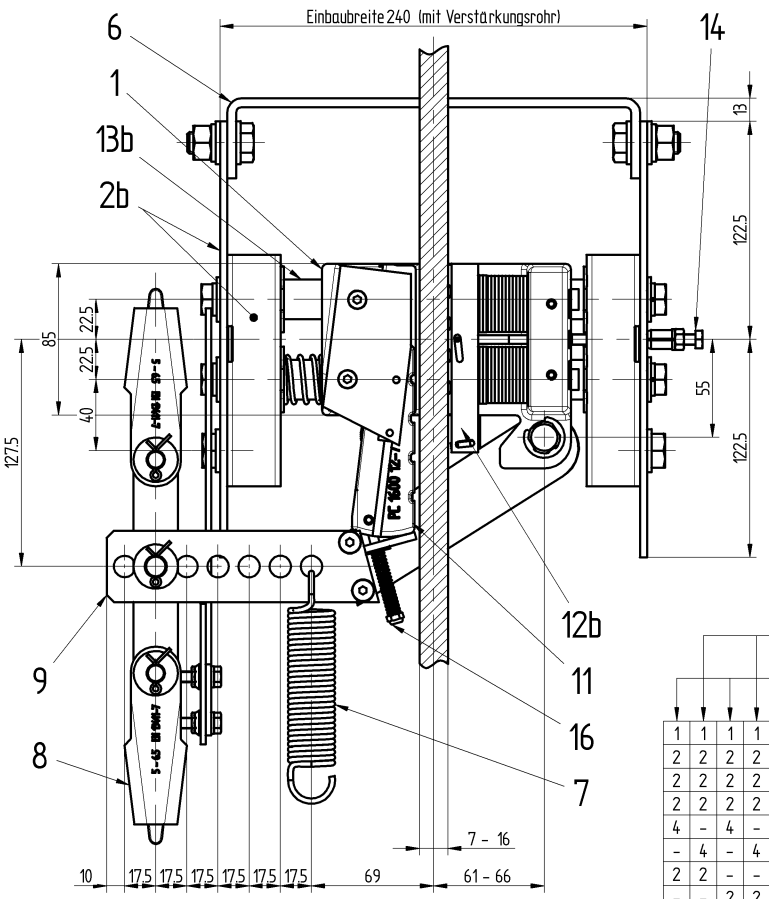
4.4. Safety gear heads:
centred, clean, easy lateral movability of safety gear heads (Pos. 1) on the bearings shafts (Pos. 13) through pressure spring (Pos. 15) is ensured.

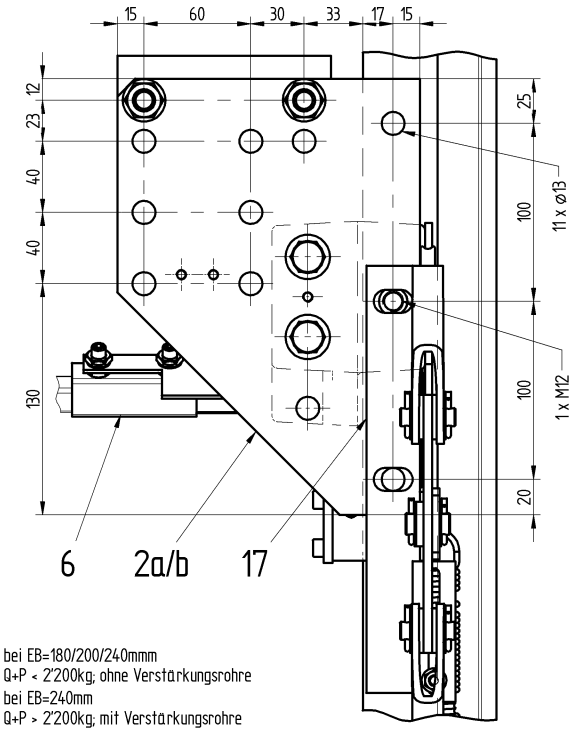
4.5. Guide-ways of cabin:
In an impeccable condition, not widened.

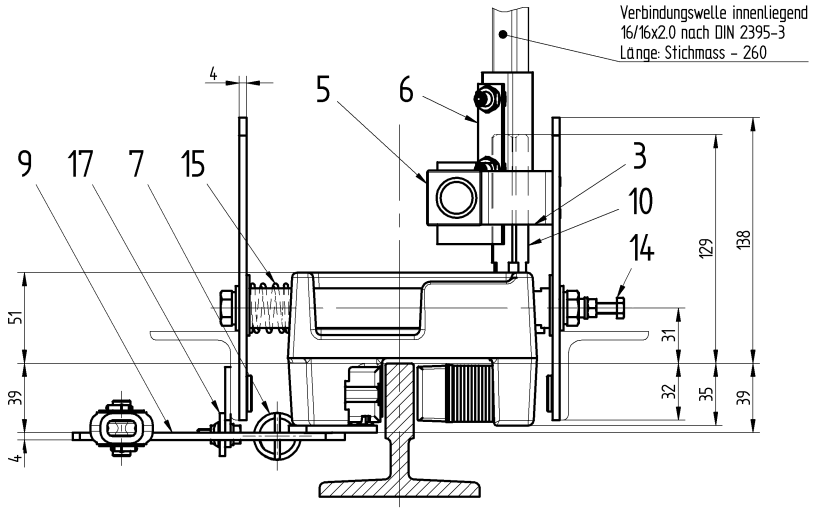
4.6. Cleanliness:
In general and in particular in the case of building construction elevators and conversions of existing installations: make sure that the safety gear heads (Pos. 1) are protected against contamination with plaster, concrete, cement, mortar, gravel or other materials. Contaminated safety gear heads have to be dismantled and cleaned.

If these simple instructions are followed, then the safety for the users of the elevator as well as for the installation company can be increased significantly.









bei EB=180/200/240mm
Q+P < 2'200kg; ohne Verstärkungsrohre
bei EB=240mm
Q+P > 2'200kg; mit Verstärkungsrohre

Stückzahlen pro Fangvorrichtung

Stk.	Stk.	Stk.	Stk.	Gegenstand	Pos.	Werkstoff	Modell	Bemerkungen
1	1	1	1	Anschlagwinkel	17	-	1500-MZ24-1	-
2	2	2	2	Augenschraube	16	-	-	-
2	2	2	2	Druckfeder 180/200/240mm	15	-	-	-
2	2	2	2	Einstellschraube M6	14	-	-	-
4	-	4	-	Aufnahmeachse 240mm	13b	-	1620-36-1	-
-	4	-	4	Aufnahmeachse 180/200/240mm	13a	-	1500-36-1/-3/-4	-
2	2	-	-	Bremsbacke kpl.	12b	-	1620-16-5Z	-
-	-	2	2	Bremsbacke	12a	-	30DA-16-2	-
2	2	2	2	Bremskeil	11	-	1610-12-2/-4	-
2	2	2	2	Auslösewelle	10	-	1500-06-1	-
1	1	1	1	Reglerseilhebel li / re	9	-	1500-02-1/-2	-
1	1	1	1	Seilschlossgarnitur	8	-	FV-MZ30-1	-
1	1	1	1	Rückzugfeder	7	-	FV-MZ20-1	-
1	1	1	1	2 Auslösevierkant	6	-	FV-MZ11-1	-
1	1	1	1	Endschalter	5	-	FV-MZ05-2	-
1	1	1	1	2 Führungsschuhpl. 180/200/240mm	4	-	30DA-MZ40-1/-2/-3	-
1	1	1	1	Endschalteranbau 180/200/240mm	3	-	1500-MZ38-1/-2/-3	-
1	-	1	-	4 Knotenblech mit Verstärkungsrohr	2b	-	1500-MZ19-1V	-
-	1	-	1	4 Knotenblech	2a	-	1500-MZ19-1	-
1	-	-	-	Grundeinheit mit Verstärkungsrohr	1	-	1620-N240R16.V	-
-	1	-	-	Grundeinheit	1	-	1620-N180R16	-
-	-	1	-	Grundeinheit mit Verstärkungsrohr	1	-	1610-N240R16.V	-
-	-	-	1	Grundeinheit	1	-	1610-N180R16	-

Das Urheberrecht auf dieser Zeichnung und allen Beilagen, die dem Empfänger persönlich anvertraut sind, verbleibt jederzeit unserer Firma. Ohne unsere schriftliche Genehmigung darf diese nicht eingelesen EDV, kopiert, vervielfältigt und niemals Dritten zugänglich gemacht werden.

Technische Änderungen vorbehalten

Änderung: (Dat/Ind)
-
-
-
-

Ausgabe:
01.10.09 / DH

Zusammenstellung

zu Betriebsanleitung
FV-Typ: PC1610, PC1620

Massstab	Gezeichnet	24.09.09	DH
1 : 3	Kontrolliert	01.10.09	DH
-	Geprüft	01.10.09	HG
-	Ersatz für:	-	

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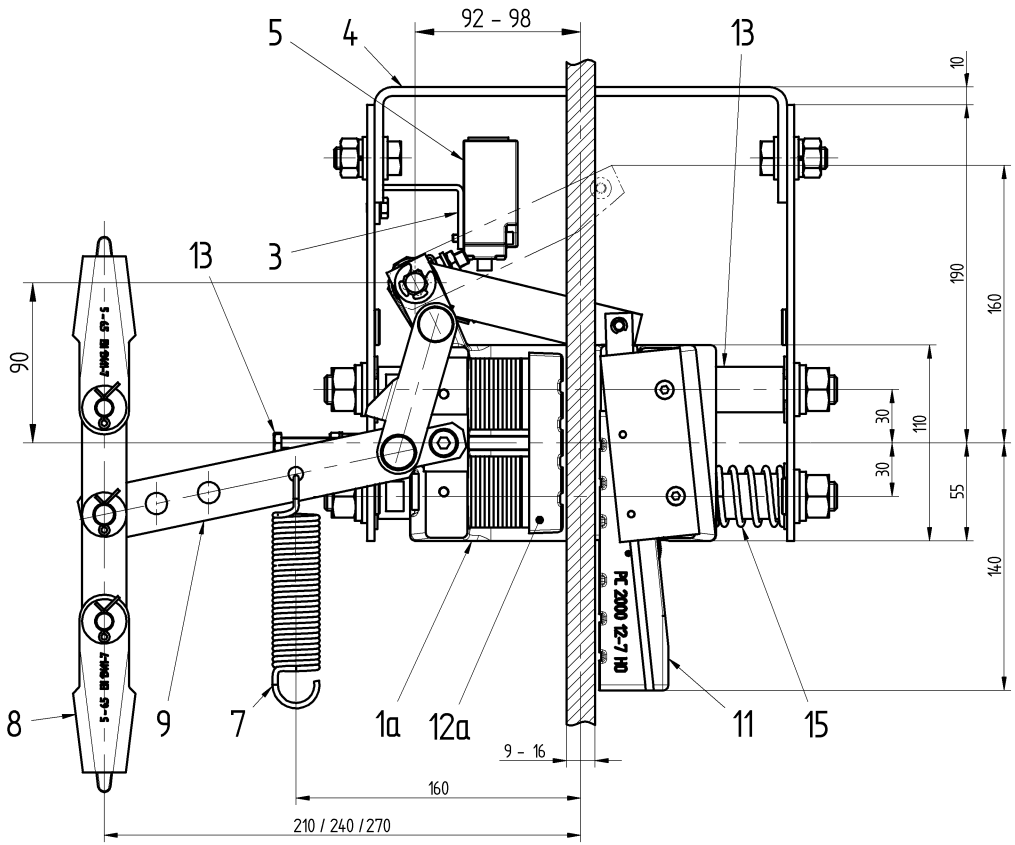
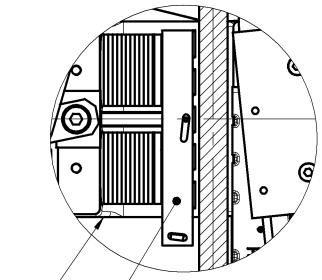
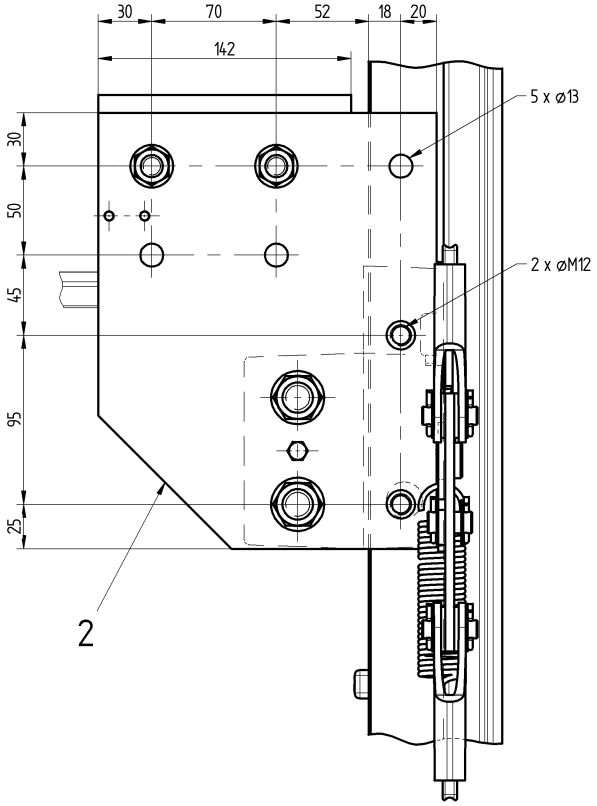
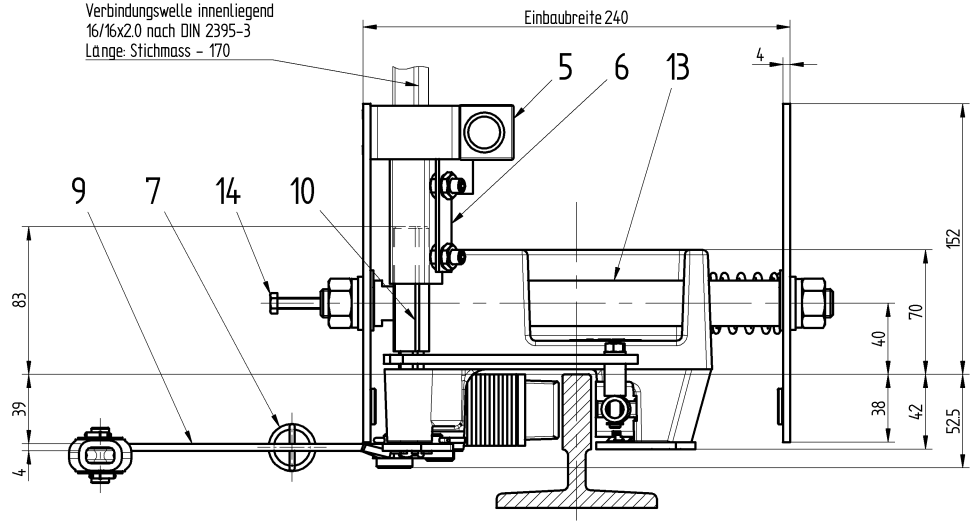
Zeichnungsnummer
1610-BA01-1









Stückzahlen pro Fangvorrichtung

2020 mit Lösehilfe	2010					
2	2	Druckfeder	15	-	-	-
2	2	Einstellschraube M6	14	-	-	-
4	4	Aufnahmeachse	13	-	2020-36-4	-
2	-	Bremsbacke kpl.	12b	-	2020-16-5Z	-
-	2	Bremsbacke	12a	-	60DA-16-2	-
2	2	Bremskeil	11	-	2020-12-2 / -4	-
2	2	Auslösewelle	10	-	2020-06-1	-
1	1	Reglerseilhebel	9	-	2020-02-1	-
1	1	Seilschlossgarnitur	8	-	FV-MZ30-1	-
1	1	Rückzugfeder	7	-	FV-MZ20-1	-
1	1	2 Auslösevierkant	6	-	FV-MZ11-1	
1	1	Endschalter	5	-	FV-MZ05-2	-
1	1	2 Führungsschuhplatte	4	-	60DA-MZ40-1	-
1	1	Endschalteranbau	3	-	2020-MZ38-1	-
1	1	4 Knotenblech	2	-	2020-MZ19-1	-
1	-	Grundeinheit mit Lösehilfe	1b	-	2020-N240R16	-
-	1	Grundeinheit	1a	-	2010-N240R16	-

Technische Änderungen vorbehalten

Stk.	Stk.	Gegenstand	Pos.	Werkstoff	Modell	Bemerkungen

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Änderung: (Dat/Ind)
-
-
-
-

Ausgabe:
01.10.09 / DH

Zusammenstellung

zu Betriebsanleitung
FV-Typ: PC2010, PC2020

Massstab	Gezeichnet	24.09.09	DH
1 : 3	Kontrolliert	01.10.09	DH
-	Geprüft	01.10.09	HG
-	Ersatz für:	-	

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Zeichnungsnummer
2010-BA01-1